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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,845	03/04/2002	Julio A. Abusleme	108910-00057	4315

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EXAMINER
ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,845	ABUSLEME ET AL.	
	Examiner	Art Unit	
	Ramsey Zacharia	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-10* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Dependent claim 6 requires the polyamide of layer B) to have less than 40 μeq/g of $-NH_2$ end groups, however, independent claim 1 requires that the polyamide of layer B) have 40 to 300 μeq/g of $-NH_2$ end groups.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation 40-300 μeq/g, and the claim also recites 45-150 μeq/g which is the narrower statement of the broad range. This rejection may be overcome by deleting the phrase ", preferably 45-150 μeq/g" at the end of the claim.

Likewise, claims 3 and 6 also contain broad and narrow recitations that render these claims indefinite. The rejections of these claims may be overcome as follows:

in claim 3, delete the phrases ", preferably from 35 to 55%", ", preferably from 45 to 65%," and ", preferably n-butylacrylate", and

in claim 6, delete the phrase ", preferably 0.1-2% by weight,".

7. Claim 7 recites the limitation "the diamines" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Note that claim 7 depends from claim 1 but the diamines are only cited in claims 2 and 6.

8. The phrase "under the form of sheath-core fibers" renders claim 9 indefinite because the meaning of this phrase is not clear.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arcella et al. (U.S. Patent 6,509,073) in view of Stoeppelmann (U.S. Patent 5,869,157).

Arcella et al. teach a multilayer article that may be used as a fuel hose comprising a layer of a fluorinated polymer composition and a layer of hydrogenated polymer (column 2, lines 54-60). Suitable hydrogenated polymers include thermoplastic polymers, such as polyamides (column 3, lines 6-15). The fluorinated polymer composition comprises a copolymer of ethylene with tetrafluoroethylene and/or chlorotrifluoroethylene modified with an acrylic monomer, such as n-butylacrylate, that reads on the monomer of formula (a) in instant claim 1 (column 1, line 65-column 2, line 21). The copolymer comprises 10-70 mole% ethylene, 30-90 mole% tetrafluoroethylene and/or chlorotrifluoroethylene, and 0.1-30 mole% of acrylic monomer (column 2, lines 11-17).

Regarding claim 9, the tube of Arcella et al. is taken to be under the form of sheath-core fibers since it has inner (i.e. core) and outer (i.e. sheath) layers.

Arcella et al. do not teach the presence of a layer comprising diamines and a polyamide having an amount of $-NH_2$ end groups in the range of 40-300 μeq/g. However, Arcella et al. do teach a tube comprising a layer of a fluoropolymer and a layer of polyamide.

Stoeppelmann is directed to an adhesion promoter that bonds fluoropolymers to polyamides for use in multilayer tubes (column 2, lines 33-41). In one embodiment the adhesion promoter comprises a polyamide having an $-NH_2$ end group concentration of 50 μeq/g and a diamine, such as decyldiamine or dodecyldiamine (column 4, lines 1-14). In an alternative embodiment, the adhesion promoter comprises the diamine and a polyamide having an equal amount of $-NH_2$ and -COOH end groups (column 4, lines 20-26). The amount of $-NH_2$ groups in this alternative embodiment should be about 35 μeq/g (total number of end groups = $-NH_2$ end groups + -COOH end groups = 20 μeq/g + 50 μeq/g = 70 μeq/g; if the polymer has an equal amount of $-NH_2$ and -COOH end groups it should have 35 μeq/g of each).

One of ordinary skill in the art would be motivated to use the adhesion promoter of Stoeppelmann in the article of Arcella et al. to tightly adhere the fluoropolymer and polyamide layers together.

Therefore, the inventions of claims 1-3 and 6-9 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arcella et al. (U.S. Patent 6,509,073) in view of Stoeppelmann (U.S. Patent 5,869,157) as applied to claim 1 above, and further in view of Krause et al. (U.S. Patent 5,958,532).

Arcella et al. taken in view of Stoeppelmann teach all the limitations of claim 10, as outlined above, except for the present of an inner layer that is made conductive by the incorporation of graphite and/or carbon black.

Krause et al. is directed to a fluoropolymer hose that may be used in a fuel line (column 1, lines 15-17). The hose comprises two fluoropolymers layers (column 2, lines 23-29). The inner fluoropolymer layer has electrostatic discharge resistance, allowing electrostatic charge generated during the flowing of fuel to be carried to the ground (column 3, lines 52-63). The most preferred fluoropolymer for the inner fluoropolymer layer is ETFE sold under the Tefzel® trademark (column 3, line 64-column 4, line 20). Tefzel® ETFE fluoropolymers are composed of about 40-70 % ethylene and 30-60% tetrafluoroethylene.

One of ordinary skill in the art would be motivated to add an inner fluoropolymer layer of ETFE having electrostatic discharge resistance to the fuel hose of Arcella et al. to yield a safer product by allowing electrostatic charge generated during use to be carried to the ground.

Therefore, the invention of claim 10 would have been obvious to one of ordinary skill in the art at the time the invention was made.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-3 and 6-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21, 22, and 24 of U.S. Patent No. 6,509,073 in view of Stoeppelmann (U.S. Patent 5,869,157).

Claims 21, 22, and 24 of U.S. Patent No. 6,509,073 are directed to a fuel line comprising a crosslinkable polymer composition and a hydrogenated polymer. The crosslinkable polymer composition is a copolymer of ethylene and chlorotrifluoroethylene and/or tetrafluoroethylene with an acrylic monomer that reads on monomer (a) of instant claim 1. The hydrogenated polymer may be a polyamide.

Regarding claim 9, the tube of U.S. Patent No. 6,509,073 is taken to be under the form of sheath-core fibers since it has inner (i.e. core) and outer (i.e. sheath) layers.

U.S. Patent No. 6,509,073 does not teach the presence of a layer comprising diamines and a polyamide having an amount of $-NH_2$ end groups in the range of 40-300 μeq/g. However, U.S. Patent No. 6,509,073 does teach a tube comprising a layer of a fluoropolymer and a layer of polyamide.

Stoeppelmann is directed to an adhesion promoter that bonds fluoropolymers to polyamides for use in multilayer tubes (column 2, lines 33-41). In one embodiment the adhesion promoter comprises a polyamide having an $-NH_2$ end group concentration of 50 μeq/g and a

diamine, such as decyldiamine or dodecyldiamine (column 4, lines 1-14). In an alternative embodiment, the adhesion promoter comprises the diamine and a polyamide having an equal amount of $-NH_2$ and -COOH end groups (column 4, lines 20-26). The amount of $-NH_2$ groups in this alternative embodiment should be about 35 μeq/g (total number of end groups = $-NH_2$ end groups + -COOH end groups = 20 μeq/g + 50 μeq/g = 70 μeq/g; if the polymer has an equal amount of $-NH_2$ and -COOH end groups it should have 35 μeq/g of each).

One of ordinary skill in the art would be motivated to use the adhesion promoter of Stoeppelmann in the article of U.S. Patent No. 6,509,073 to tightly adhere the fluoropolymer and polyamide layers together.

14. Claim 10 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21, 22, and 24 of U.S. Patent No. 6,509,073 in view of Stoeppelmann (U.S. Patent 5,869,157), as applied to claim 1 above, and further in view of Krause et al. (U.S. Patent 5,958,532).

U.S. Patent No. 6,509,073 taken in view of Stoeppelmann teach all the limitations of claim 10, as outlined above, except for the present of an inner layer that is made conductive by the incorporation of graphite and/or carbon black.

Krause et al. is directed to a fluoropolymer hose that may be used in a fuel line (column 1, lines 15-17). The hose comprises two fluoropolymers layers (column 2, lines 23-29). The inner fluoropolymer layer has electrostatic discharge resistance, allowing electrostatic charge generated during the flowing of fuel to be carried to the ground (column 3, lines 52-63). The most preferred fluoropolymer for the inner fluoropolymer layer is ETFE sold under the Tefzel®

trademark (column 3, line 64-column 4, line 20). Tefzel® ETFE fluoropolymers are composed of about 40-70 % ethylene and 30-60% tetrafluoroethylene.

One of ordinary skill in the art would be motivated to add an inner fluoropolymer layer of ETFE having electrostatic discharge resistance to the fuel hose of U.S. Patent No. 6,509,073 to yield a safer product by allowing electrostatic charge generated during use to be carried to the ground.

Allowable Subject Matter

15. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claim 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter.

The invention of claim 4 is directed to a multilayer article as recited in claim 1 wherein the layer A) is formed from copolymers (1) of ethylene, chlorotrifluoroethylene and/or tetrafluoroethylene, and acrylic monomer (a) blended with copolymers that are the same as copolymer (1) but without acrylic monomer (a). The amount of acrylic monomer (a) contained in the blend is in the range of 0.01-15% by mole based on the total sum of monomers of ethylene and chlorotrifluoroethylene and/or tetrafluoroethylene in the blend.

The invention of claim 5 is directed to a multilayer article as recited in claim 1 wherein the polyamides of layer B) are a blend of polyamides having different amounts of $-NH_2$ end groups provided that the amount of $-NH_2$ end groups in the blend is higher than 40 μeq/g.

Arcella et al. and Stoeppelmann represent the closest prior art. However, Arcella et al. do not teach or fairly suggest the use of a blend of fluoropolymers as recited in instant claim 4 as the crosslinked polymer composition. Stoeppelmann does not teach or fairly suggest the use of a blend of polyamides as recited in claim 5 as the adhesion promoting composition.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (703) 305-0503. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non after-final correspondences and (703) 872-9311 for after-final correspondences.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Ramsey Zacharia
Primary Examiner
Technology Center 1700
8/7/03